

THE RISE OF MODERN BIOMEDICINE: GLOBAL TRENDS IN HEALTH AND HEALING, 1500-2000

Day/Time: Tu/Th 1:30 2:20
Office: 122 Dickinson Hall
Office Hours: Tu 2:30 4:30 and by appointment
Telephone: 258 7974
E mail: httilley@princeton.edu
Preceptor: Jamie Cohen Cole Dickinson G 30 258 4700 Office hrs: M 9 11

COURSE DESCRIPTION

This course takes as its point of departure the sixteenth century, a period of increasing scientific change and intensifying European exploration across the globe. To understand and explain the rise of modern biomedicine, one must give considerable attention not just to developments within Europe but to the enduring conceptual and material influences of European and, in the later period, U.S. expansion and imperialism. Migrations of all kinds human and non human have had far reaching effects on the distribution of diseases; likewise the circulation and exchange of ideas, including comparisons between tropical and temperate environments and peoples, provoked research priorities that were inseparable from the economic and political forces that underpinned exploration. Such historical relationships, however, were far from simple or straight forward; one purpose of the course will be to investigate their complexity.

The readings and lectures will by necessity chart significant changes in:

- global epidemiology;
- the professional and institutional landscapes that affected health and healing;
- the organization, dissemination, and reproduction of biomedical knowledge;
- the role of technologies in the study and control of disease; and
- the diverse experiences of recipients of health care.

It is important to note that while Europe will often serve as a geographical point of departure, these patterns were occurring around the world, albeit often on different scales. Thus, where possible, you will have a chance to read literature that enables you to compare trends across nations and continents.

Historians have only recently begun to consider the non Western dimensions of biomedicine and modern science. That said, in the first several decades of the twentieth century, a handful of academics, including anthropologists and medical doctors, began to write more self consciously about the historical differences between “primitive” and “Western” medicine. Today this literature has burgeoned into a sub discipline in its own right, known variously as the history of “indigenous,” “traditional,” and “popular” medicine. Given the growing interest within industrial countries in the pharmaceutical and healing effects of medical practices and products in the developing world, this course will also examine critically the historical origins of such interests, and will analyze the usefulness of conceptual dichotomies such as modern and traditional, Western and indigenous.

You should finish the course with a far richer understanding of the complex and multi stranded roots of modern biomedicine. You should also begin to develop the tools to evaluate its effectiveness and impact over time.

OVER-ARCHING QUESTIONS AND THEMES FOR THE TERM*:

- How successful has biomedicine been in healing, curing, and relieving human suffering?
- How did biomedicine become “uniquely powerful” and “uniquely global”?
- In what ways did non European places and peoples serve as a realm for biomedical innovation, professional growth, and conceptual discovery? Were there parallel processes within Europe itself?
- Epidemics and depopulation shaped many colonial and expansionist experiences, but not all. How did theorists in different time periods explain this? Likewise, epidemics were central to the growth of medical interest in early modern Europe. Why was this so?
- What were the processes by which both the body and the mind have been medicalized?
- Is it fair to argue that medical practitioners, with their accompanying ideas and practices, served as “tools of empire”? How?
- Spatial, imperial, and military metaphors are pervasive in many biomedical fields. In what ways do the social and material roots of these fields shed light on this pattern? Do such influences matter?
- With the proliferation of biomedical fields in the 19th and 20th centuries was it no longer possible to treat human beings in their entirety? What were the competing approaches that countered these trends if any?
- Where did the idea of conquering or eradicating disease come from? Was this purely hubris, ignorance, or were there valid reasons for theorists and practitioners of the period to promote such an idea?
- In what ways, historically, has medicine been related to the human and environmental sciences and, by extension, to social and natural environments?

*** Given the far-reaching scope of many of the questions, you will not be expected to provide historically definitive answers. You will, however, have an opportunity to write a final research paper in which you take up one or more of the questions for closer examination.**

ASSIGNMENTS AND GRADING:

Bi weekly responses to the readings	6 total	20	DUE in Precepts
Precept Participation		20	
Mid term Exam	Take Home	20	
Research/Creative Writing Paper	~15 pages	20	DUE APRIL 24 th by 3pm
Final Exam	Take Home	20	

REFERENCE WORKS*:

- W.F. Bynum and Roy Porter, eds., *Companion Encyclopedia of the History of Medicine*, 2 volumes New York: Routledge, 1993 .
- L. Conrad, M. Neve, V. Nutton, R. Porter, and A. Wear, *The Western Medical Tradition, 800 BC to AD 1800* Cambridge: Cambridge University Press, 1995 .
- G.C. Cook, ed., *Manson's Tropical Diseases* Philadelphia: W.B. Saunders, 1996 .
- R. Cooter and J. Pickstone, eds., *Medicine in the Twentieth Century* Amsterdam: Harwood Academic Press, 2000 .

P. Corsi and Paul Weindling, *Information Sources in the History of Science and Medicine* Butterworth Scientific, 1983 .

P. Durbin, ed., *A Guide to the Culture of Science, Technology and Medicine* Free Press, 1980 .

Kenneth F. Kiple, ed., *The Cambridge World History of Human Disease* Cambridge: Cambridge University Press, 1993 .

Roy Porter, ed., *Cambridge Illustrated History of Medicine* Cambridge: Cambridge University Press, 1996 .

Irvine Loudon, ed., *Western Medicine: An Illustrated History* Oxford: Oxford University Press, 1997 .

D.L. Cowen and W.H. Helfand, *Pharmacy: An Illustrated History* New York: Harry Abrams, 1988 .

Thomas Neville Bonner, *Becoming a Physician: Medical Education in Britain, France, Germany and the United States, 1750 1945* Baltimore, 1995 .

H.O. Lancaster, *Expectations of Life: A Study in the Demography, Statistics, and History of World Mortality* New York: Springer Verlag, 1990 .

* These references are on reserve and may be useful in choosing a topic to research further.

WEEK 1 – INTRODUCTION: HISTORICAL CHANGE, MEDICAL PLURALISM, & THE ROOTS OF HEALING

3 February Lecture 1: “Global Burdens of Disease: Medicine and Healing in History”

5 February Lecture 2: “Antecedents to the Renaissance: Multiple Healing Traditions”

Key Issues and Objectives The first week’s readings and lectures serve four functions: to introduce key analytical categories like health, healing, medicine, and disease; to provide an orientation to some of the methodological challenges of understanding change of ideas, practices, therapies, etc over time; to situate the history of biomedicine within a global and comparative context; and to develop a sense of the field’s early forays into “primitive” medicine, which raises issues of rationality, efficacy, and pluralism.

Questions for the week: What constitutes the key components of the history of medicine for Roy Porter? How does Ackerknecht define “*primitive*” medicine and how would you say it relates to and differs from *ancient* ideas concerning health, illness, and disease?

Roy Porter, Introduction, Chapter 1, “The Roots of Medicine,” and chapter 2, “Antiquity,” in *The Greatest Benefit to Mankind A Medical History of Humanity* London, 1997 , pp. 1 82.

Erwin Ackerknecht, “Problems of Primitive Medicine,” *Bulletin of the History of Medicine*, v. 11 1942 , pp. 503 521.

Primary Sources: Hippocrates, Galen, and Dioscorides ~28 pp

Reading for the week: 130 pages

**WEEK 2: MEDICAL UNDERSTANDINGS IN THE RENAISSANCE
& SCIENTIFIC REVOLUTION**

10 February Lecture 3: “Renaissance Medicine, *Materia Medica*, and Eurasian Contacts”

12 February Lecture 4: “The Columbian Exchange: Old and New World Epidemiology”

Key Issues and Objectives This week introduces numerous issues, several of which are explored in more detail in the three weeks that follow, including: Europe, the New World, and epidemics; the state of anatomy, surgery, and pharmacy; physicians’ roles in society and their ability or inability to cure; Paracelsus, chemistry, and new disease concepts causation ; mechanistic ideas of the body; and early ideas of “sickness of the mind”. The case study by Pearson explores interactions between Portuguese and Indian views of medicine, offering a brief discussion of epidemics, Hindu doctors, and the mixture that ensued among Europeans and Hindus in Goa in the mid sixteenth century.

Questions for the week: Why was there a literal renaissance of medical ideas in the sixteenth century and what role did exploration play in this development? What is the significance of Garcia d’Orta’s writings and of the encounter between Indian and European medicine?

Roy Porter, Chapters 8 9, “Renaissance,” and “The New Science,” in *The Greatest Benefit to Mankind*, pp. 163 244.

Harold J. Cook, “Physicians and Natural History,” in Jardine, Secord and Spary, eds., *Cultures of Natural History* Cambridge: Cambridge University Press, 1996 , pp. 91 105.

Case Study: M.N. Pearson, “First Contacts between Indian and European Medical Systems: Goa in the Sixteenth Century,” in D. Arnold, ed., *Warm Climates and Western Medicine* Atlanta, 1996 , pp. 20 41.

Primary Source: Garcia d’Orta, *Colloquies on the Medical Simples and Drugs of India* 1563 ~30 pp

Reading for the week: 150 pages

.....

WEEK 3: ENLIGHTENMENT EUROPE, EMPIRES, AND THE SLAVE TRADE

17 February Lecture 5: “Enlightenment Theories of Contagion, Disease, and Illness”

19 February Lecture 6: “The Slave Trade, Infectious Disease, and Medical Treatment”

Key Issues and Objectives This week moves into the Enlightenment and juxtaposes further developments in medical science and practice with the issue of overseas expansion; in addition to those topics already covered, it will also introduce childbirth, reproduction and the role of women in medicine, which will be discussed in much more detail in the following week. The chapters by Curtin and Scott provide important perspectives on humans and diseases as biological agents; they also, in turn, raise a number of questions about the nature/culture divide; finally, they introduce the issue of race and immunity. These perspectives will be examined critically, with Curtin and Scott being framed as “demographic and epidemiological” approaches to history. In later weeks, we will explore case studies that pursue a more “social” approach to the history of medicine.

Questions for the week: How did the trans Atlantic slave trade and European exploration affect disease patterns and demography in Europe, the Americas, and Africa? What are some of the methodological challenges in reconstructing disease patterns in the past? How did the forced migration of peoples at this time influence medical theories?

Roy Porter, “Enlightenment,” in *The Greatest Benefit to Mankind*, pp. 245 303.

*Philip Curtin, “Epidemiology and the Slave Trade,” *Political Science Quarterly*, v. 83 1968 , pp. 190 216. only pp. 190 199 assigned * Available on line in J Stor

Case Study: H. Harold Scott, “The Influence of the Slave Trade in the Spread of Tropical Disease” *Transactions of the Royal Society of Tropical Medicine and Hygiene*, v. 37 1943 , pp. 169 188.

Primary Source: Alexander Falconbridge, *An Account of the Slave Trade on the Coast of Africa* 1788 -11 pages Falconbridge was a physician on a slave ship.

Reading for the week: 115 pages

.....

WEEK 4: ANATOMY AND THE HUMAN BODY: SEX, RACE AND CLIMATE

24 February Lecture 7: “Investigating the Human Body: Anatomy and Physiology”

26 February Lecture 8: “Ideas of Race, Sex, and Human Origins”

Key Issues and Objectives: This week’s subject matter focuses on the importance of anatomy and physiology to discussions of sex, race, and by extension, human society; here the emphasis will be as much on by products and vestiges of colonial expansion, both conceptual and material, as on theories developed in European centers of learning. These insights, however, should not negate an appreciation of the novelty of anatomical and physiological theories developed in the Enlightenment and early 19th century. The readings should also illustrate the close affinities between the human and medical sciences.

Questions for the week: How did sex and race become medical and scientific categories? What relationship did they have to anatomical and physiological studies? And finally, how was climate seen as an important factor affecting racial ideas in particular?

Case Study: Londa Schiebinger, “The Anatomy of Difference,” and “Theories of Gender and Race,” in *Nature’s Body: Gender in the Making of Modern Science* Boston, 1993 , pp. 115 183.

Primary Sources: Immanuel Kant, “Of the Different Human Races”; Johann Gottfried von Herder, “Ideas on the Philosophy of the History of Humankind”; Johann Friedrich Blumenbach, “On the Natural Variety of Mankind,” in R. Bernasconi and T. Lott, eds., *The Idea of Race* Cambridge: Hackett Publishing, 2000 , pp. 8 37.

Reading for the week: ~100 pages

**WEEK 5: TROPICAL AND TEMPERATE ENVIRONMENTS –
MAPPING DISEASES & DECIPHERING EPIDEMICS**

2 March Lecture 9: “Geographies of Disease and Epidemics”

4 March Lecture 10: “The Tropics: Environments and Pathologies”

Key Issues and Objectives: This week delves much more deeply into the importance of space and place to the understanding and description of diseases and epidemics. Sticking to the late eighteenth and early nineteenth centuries, it also begins to examine formative links between the environmental and medical sciences and to contextualize the different motivations for venturing into tropical environments. In reading Lind and Hirsch, you should pay particular attention to the changing characterizations of place in medical theory.

Questions for the week: Hirsch differentiates between medical geography and geographical pathology. How did a preoccupation with place and travel affect medical ideas in the eighteenth and nineteenth centuries, and, in turn, what kinds of new medical practices did European migrations generate? In what ways would you say that medicine became a “tool of empire”?

Case Study: Alan Bewell, *Romanticism and Colonial Disease*, pp. 151 and 242–276.

Primary Sources: James Lind, *An Essay on Diseases Incidental to Europeans in Hot Climates* 1768 and August Hirsch, *Handbook of Geographical and Historical Pathology* on cholera 1859–1864 ~64 pp

Reading for the week: 150 pages the Lind excerpts should be quick reading

FILM: “Horseman on a Roof” details a cholera epidemic in 1832 in France

.....

**WEEK 6: MEDICINE, EMPIRICISM, AND THE INFLUENCE OF SCIENCE –
19TH CENTURY**

9 March Lecture 11: “Experimental Medicine and the Rise of the Laboratory”

11 March Lecture 12: “Understanding the 19th century mortality revolution”

MID-TERM HANDED OUT ON TUE AND DUE FRI BY 3PM

Key Issues and Objectives: This week is devoted to understanding the far reaching conceptual, professional, and demographic “revolutions” that took place in the 19th century; themes introduced here will be explored further in the following two weeks. Paying particularly close attention to developments in France and Germany, but also Britain and the United States, the readings chart the rise of experimental medicine, new pharmacological therapies, changes in professional organization, and the increasing importance of the laboratory as a site of knowledge production and new instruments such as the microscope as means for understanding disease and pathology.

Questions for the week: What was scientific about the new approaches to medicine in the mid nineteenth century and how did efforts to “professionalize” influence different specialists’ attitudes and rhetoric? To what extent were physicians responsible for the mortality revolution of the 19th century? What other factors were important?

Roy Porter, “Scientific Medicine in the Nineteenth Century,” in *The Greatest Benefit to Mankind*, pp. 304 347.

***Case Study:** William Coleman, “The Cognitive Basis of the Discipline: Claude Bernard on Physiology,” *Isis*, v. 76 1985 , pp. 49 70. *Available on line in J Stor

Primary Source: Claude Bernard, *An Introduction to the Study of Experimental Medicine* 1865 -53pp

Reading for the week: 118 pages

SPRING RECESS

WEEK 7: SMALL SCALE AND LARGE SCALE: THE GERM THEORY OF DISEASE, PUBLIC HEALTH, AND SOCIAL MEDICINE

23 March Lecture 13: “Industrialization and Public Health”

25 March Lecture 14: “Bacteriology, the Germ Revolution, and Tropical Medicine”

Key Issues and Objectives: Staying predominantly in the late 19th century, this week aims to deepen your understanding of developments in bacteriology, chemistry, and immunology, while linking this to wider political and economic issues related to public health and the modern state.

Questions for the week: What were the consequences of a germ theory of disease? And how was this related, if at all, to new methods concerning public health and sanitation?

Dorothy Porter, “Public Health and Centralization,” “The Enforcement of Health and Resistance,” and “Localization and Health Salvation in the United States,” in *Health, Civilization and the State: A history of public health from ancient to modern times* London, 1999 , pp. 111 162.

Case Study: Paul Weindling, “A Virulent Strain: German Bacteriology as Scientific Racism, 1890 1920,” in Waltraud Ernst and Bernard Harris, eds., *Race, Science and Medicine, 1700 1960* London, 1999 , pp. 218 235.

Biographical Sources: Louis Pasteur and Robert Koch chapters in Paul de Kruif, *Microbe Hunters* New York: Harcourt, Brace, and Co, 1933 1926 orig , pp. 59 152.

Reading for the week: 125

RESEARCH or CREATIVE WRITING PAPER ABSTRACT DUE 26 MARCH

.....

WEEK 8: MIND/BODY/SOCIETY REVISITED: EUGENICS, INTELLIGENCE, AND PSYCHOLOGY

30 March Lecture 15: “Diseases of the Mind”

1 April Lecture 16: “The Global Reach of Eugenics and Social Welfare”

Key Issues and Objectives: This week’s focus is on the relationships, in the last decades of the 19th and first several decades of the 20th centuries, among population, reproduction, intelligence and eugenics. The Dorothy Porter and Dubow texts are selected to complement each other; the former offers an overview of European and North American trends, while the latter situates South African developments in an international context with particular sensitivity to patterns in the United States and Great Britain . Since social theory was often linked to medical opinion and vice versa in this period, it seems helpful to treat eugenics and psychology/psychiatry together.

Questions for the week: What did the labels “insane,” “feeble minded,” and “degenerate” have in common in the late nineteenth and early twentieth centuries? How did theories of heredity and biology underpin these notions? And finally, why was the issue of human reproduction so central to the fields of “eugenics” and social policy?

Roy Porter, “Psychiatry,” in *The Greatest Benefit to Mankind*, pp. 493 524.

Dorothy Porter, “The quality of population and family welfare: human reproduction, eugenics, and social policy,” in D. Porter, *Health, Civilization and the State: A history of public health from ancient to modern times* London, 1999 , pp. 165 195.

Case Study: Saul Dubow, “Biological Determinism and the development of eugenics” in Dubow, *Scientific Racism in Modern South Africa* Cambridge, 1995 , pp. 120 165.

Primary Sources: Francis Galton, “Eugenics: Its Definition, Scope and Aims,” in R. Bernasconi and T. Lott, eds., *The Idea of Race* Cambridge: Hackett Publishing, 2000 , pp. 79 83.

Reading for the week: 112 pages

FILM in precepts : “In The Shadow of the Reich: Nazi Medicine”

.....

WEEK 9: PROFESSIONAL ETHICS – EXPERIMENTATION, PROFIT, & ALLEGORY

6 April Lecture 17: “History of Human Experimentation”

8 April Lecture 18: “Pharmaceuticals and Industry”

Key Issues and Objectives: In this week you are asked to consider the historical relationship between medical research and human experimentation on the one hand, and pharmaceuticals and financial gain on the other. Both involve complex ethical and moral dimensions. In addition, we will also turn our sights to Albert Camus’ *The Plague* to consider how epidemic disease and the role of the “doctor” have served larger metaphorical and allegorical purposes in literature. For those choosing the creative writing option, this will be a good opportunity to consider the kind of approach you would like to take. *The Plague* too raises ethical issues; written during the Second World War, it is often read, and Camus said he wished it to be read, as a tale about the Nazi occupation of France. In his notebooks he also made reference to the War itself: “I want to express by means of the plague the stifling air from which we all suffered and the atmosphere of threat and exile in which we lived . . . The plague will give the image of those who in this war were lifted to reflection, to silence and to moral anguish.” Quoted in S.G. Kellman, *The Plague: Fiction and Resistance* 1993 , p. 93.

Questions for the week: What have been the limits of human experimentation? How closely related have industries been with drug research and production? Consider the literal experience of plague in *The Plague*; what light does this shed on contemporary concerns?

Albert Camus, *The Plague/La Peste* original 1948

Samuel Hopkins Adams, “The Great American Fraud,” *Collier’s Weekly* October 7 1905.

.....

WEEK 10: DISCIPLINARY DEVELOPMENTS AND MEDICAL TECHNOLOGIES

13 April Lecture 19: “Medical Technologies and Their Effects”

15 April Debate: “Success or Failure: the Role of Physicians in History”

Key Issues and Objectives: This week considers the role of technology in medical research and diagnosis. As disciplines proliferated so too did the technologies and equipment that accompanied these fields. The articles and primary sources compiled by Warner and Tighe provide diverse material for a case study on technologies’ diverse influences. The chapter by Lawrence, in turn, raises the issue of holism in medical practice and highlights trends, particularly in Britain, that countered mechanization and standardization.

Questions for the week: How did disciplinary specialization in medicine lead to a compartmentalized approach to human health? What role did technologies play in enabling or countering this trend?

Roy Porter, “Medical Research,” “Clinical Science,” and “Surgery,” in *The Greatest Benefit to Mankind*, pp. 525 627. OPTIONAL this reading may be skimmed for background

J.H. Warner and J.A. Tighe, “Technological Imperative? Hospitals, Professions, and Patient Expectations, 1890 1950,” in *Major Problems in the History of American Medicine and Public Health* Boston: Houghton Mifflin, 2000 , pp. 349 387.

Case Study: Christopher Lawrence, “Incommunicable Knowledge: Science, Technology and the Clinical Art in Britain, 1850 1914,” *Journal of Contemporary History* v. 20 1985 , pp. 503 520.

Primary Source: Included in the Warner and Tighe readings in packet.

Reading for the week: 56 pages

.....

WEEK 11: DISEASE ERADICATION AND “WORLD HEALTH”

20 April Lecture 20: “The Emergence of International Health Organizations”

22 April Lecture 21: “Eradication as a Strategy for Disease Control”

Key Issues and Objectives: While the idea that diseases could be conquered is an old one, it was not until the early twentieth century that “disease eradication” became an explicit strategy at the national and international levels. This week explores the origins of such endeavors and examines the role of international institutions public and private in promoting different types of public health and disease control measures.

Questions for the week: Why would medicine be considered one of the “pillars of peace”? Do you agree that the idea of disease eradication is a utopian dream?

J.N. Hays, “The Apparent End of Epidemics,” in Hays, *The Burdens of Disease: Epidemics and Human Response in Western History* London, 1998 , pp. 240 277.

Case Study: Marcos Cueto, “The Cycles of Eradication: the Rockefeller Foundation and Latin American Public Health, 1918 1940,” in P. Weindling, *International Health Organizations and Movements, 1918 1939* Cambridge, 1995 , pp. 222 243.

WHO, “Fifty Years of the World Health Organization, 1948 1998” -10 pages

Reading for the week: 70 pages

RESEARCH PAPER DUE 24TH APRIL BY 3PM IN YOUR PRECEPTOR’S BOX

WEEK 12: ETHNOMEDICINE, INDIGENOUS KNOWLEDGE & MEDICAL PLURALISM REVISITED

27 April Lecture 22: “Ethnobotany and Ethnomedicine as Scientific Interests”

29 April Lecture 23: “Medical Pluralism and International Health Trends”

Key Issues and Objectives: The final week returns to the issue of medical pluralism and ethnomedicine; the article by Feierman illustrates the importance of rigorous analysis of both the practices and concepts that lie behind African medicine. Anyinam’s article, on the other hand, explores the complex links between indigenous knowledge and local environments.

Questions for the week: How does medical pluralism relate to people’s health needs and why is the issue of “indigenous knowledge” so central to this question in so many parts of the world? In what ways does historical analysis shed light on the complexity of these questions?

*Steve Feierman, “Struggles for Control: the Social Roots of Health and Healing in Modern Africa,” *African Studies Review*, v. 28 1985 , pp. 73 145. *Available on line in J Stor.

*Charles Anyinam, “Ecology and Ethnomedicine: Exploring Links Between Current Environmental Crisis and Indigenous Medical Practices,” *Social Science and Medicine*, v. 40 1995 , pp. 321 329. *Available on line through Science Direct.

Source: **WHO Traditional Medicine Strategy 2002 2005* Geneva: WHO, 2002 . *Available as PDF file at: www.who.int/medicines/organization/trm/orgtrmmain.shtml. Read pp. 1 18 and skim chapters 2 and 4.

Reading for the week: 100 pages